VolView

An open source, portable, and extensible web application for cinematic rendering and annotating medical images

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30 September - GNU Health/Orthanc conference
Paraview?
3DSlicer
CMake

-- The C compiler identification is Clang 12.0.0
-- Detecting C compiler ABI info
-- Detecting C compiler ABI info - done
-- Check for working C compiler: /usr/bin/clang - skipped
-- Detecting C compile features
-- Detecting C compile features - done
-- CMAKE_INSTALL_PREFIX=/usr
-- CMAKE_BUILD_TYPE=RelWithDebInfo
-- NTL_LOG_LEVEL not specified, default is 3 (ERROR) for release builds
-- Replacing -O0 in CMAKE_C_FLAGS_RELEASE with -O2
-- Performing Test HAS_ACCEPTABLE_FORTIFY
-- Performing Test HAS_ACCEPTABLE_FORTIFY - Failed
-- Unsupported _FORTIFY_SOURCE found, forcing _FORTIFY_SOURCE=1
-- Removing --sort-common from linker flags
-- Performing Test HAVE_EXEINFO_BACKTRACE
-- Performing Test HAVE_EXEINFO_BACKTRACE - Success
-- Performing Test HAVE_BUILTIN_ADD_OVERFLOW
-- Performing Test HAVE_BUILTIN_ADD_OVERFLOW - Success
-- Performing Test HAVE_NIMPPLICIT_FALLTHROUGH_FLAG
-- Performing Test HAVE_NIMPPLICIT_FALLTHROUGH_FLAG - Success
-- Performing Test HAVE_NMLA_FLAG
-- Performing Test HAVE_NMLA_FLAG - Success
-- Performing Test HAVE_FSTACK_PROTECTOR_FLAG
-- Performing Test HAVE_FSTACK_PROTECTOR_FLAG - Success
-- Performing Test HAVE_FSTACK_PROTECTOR_FLAG - Success
-- Performing Test HAVE_PRIVATE
-- Performing Test HAVE_PRIVATE - Success
-- Performing Test HAVE_DIAG_COLOR_FLAG
-- Performing Test HAVE_DIAG_COLOR_FLAG - Success
-- Found PkgConfig: /usr/bin/pkg-config (found version "1.7.3")
-- Looking for dlopen in dl
-- Looking for dlopen in dl - found
-- Looking for dlerror in dl - found
-- Looking for dlsym in dl - found
CMake Error at build_files/cmake/macros.cmake:1243 (if):

  if given arguments:

    "NOT" "AND" "ON"

Unknown arguments specified
Call Stack (most recent call first):
  build_files/cmake/platform/platform_unix.cmake:670 {set_and_warn_library_found}
  CMakeLists.txt:1067 (include)

-- Configuring incomplete, errors occurred!
See also "/home/x/blender-git/build_linux/CMakeFiles/CMakeOutput.log".
See also "/home/x/blender-git/build_linux/CMakeFiles/CMakeError.log".
make: *** [.CMakefile:354: all] Fehler 1
x@ubuntu:~/blender-git/blender$
Kitware / Leader in AI & scientific open source solutions

**Software development**
Based on open source tools
300+ active projects worldwide

**Sustained Growth**
Since creation of the company
100% employee-owned

**230 employees Worldwide**
6 offices across USA/Europe

**65% staff with PhD or Master**
High Level customer expertise

**20+ years of expertise**
Kitware USA, 1998
Kitware Europe, 2010

**Revenue 2020**
$39M consolidated

**Kitware USA, 1998**
**Kitware Europe, 2010**
Customers / Various fields of application

**Academics**
70+ academic institutions worldwide

**Government agencies**
50+ government agencies and national laboratories

**Commercial companies**
Over 500 commercial customers

**Medical**
Image processing, multimodal visualization, image registration & segmentation, assisted surgery, custom software...

**Energy**
HPC, in-situ simulation, scientific visualisation, particle flow, fluid mechanics, ground exploration...

**Intelligence**
Scene analysis, big data analysis, scientific visualization, flow analysis...
Areas of expertise / Built on open source

Computer Vision
Data and Analytics
Scientific Computing
Medical Computing
Software Solutions
Applications / Universal Platforms

- Web
- Desktop
- Mobile
- Cloud / HPC

 Platforms

- 3D Slicer
- ParaView
- KWIVER
- mstik
- VTK
- Pulse
- CMake
- Resonant
- tomviz
- STK
Kitware / Services

TRAINING

SUPPORT

DEVELOPMENT

GRANT COLLABORATION
What is Orthanc?

- Open-source lightweight DICOM server
- Easily store and transfer DICOM files
- Fast and standalone
- Provides a RESTful API
- Easily customizable with plugins
What is VolView?

- **Open-source** radiological viewer in the browser
- Fast and **interactive** visualizations
- **Secure** and local DICOM viewer
- Built on **VTK.js** and **ITK-wasm**
- **Customizable** for your workflows
VolView Features

- Cinematic Volume Rendering
- Local DICOM loading
- Preset Colormaps
- Annotations
- Layouts
- Customizable
- ...and more!
Annotations

- Measurements
- Segmentation masks
- ...more on the horizon
  - Contouring
  - Angle, Bi-dim
  - ROI
Native DICOM support

- Drag and Drop your DICOM datasets
- Connect to PACS via DICOMWeb
- Splits into Patient, Study, and Series
  - Designed to give a general overview of your data
- No data sent to any servers!
Realistic Volume Rendering

- Interactive and customizable
  Cinematic Volume Rendering
- Enables high-quality volume visualization
- All in the browser!
Python Integration

- Python integration enables:
  - Interface to segmentation, AI, etc. algorithms
  - Load server-side datasets
  - Entrypoint to application customization
  - Bundling into a single application
VolView Demo

https://volview.netlify.app/

https://volview.kitware.app/

docker run -p 4242:4242 -p 8042:8042 --rm jodogne/orthanc-plugins
Next steps for VolView

- Integration of Total Segmentator and MONAI Label
- Improved segmentation tools
- Loading of DICOM Seg and RTStruct
- And more ...
Thank you!

Questions?